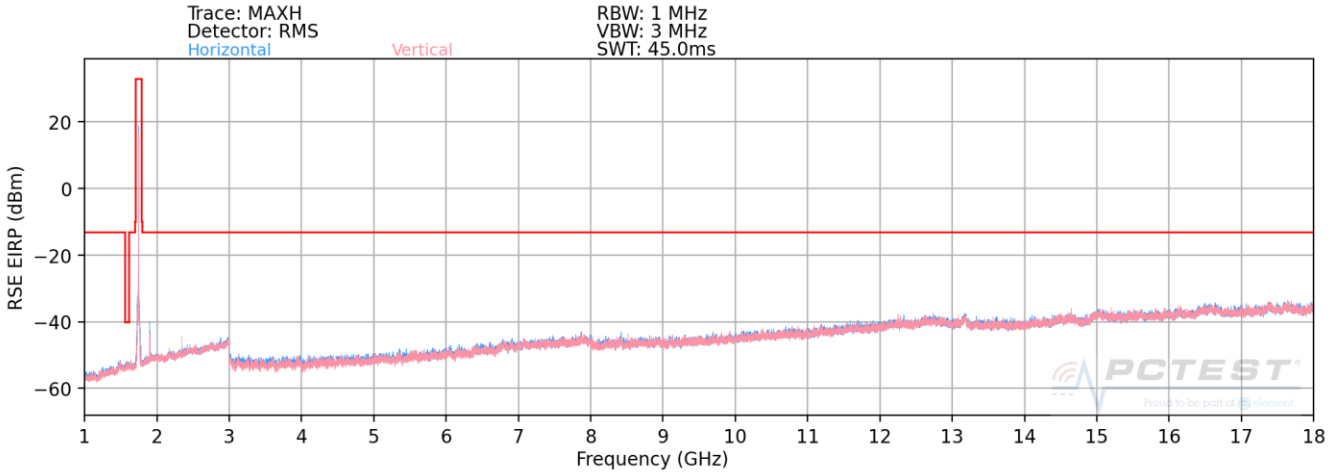
NR Band n66 – B13



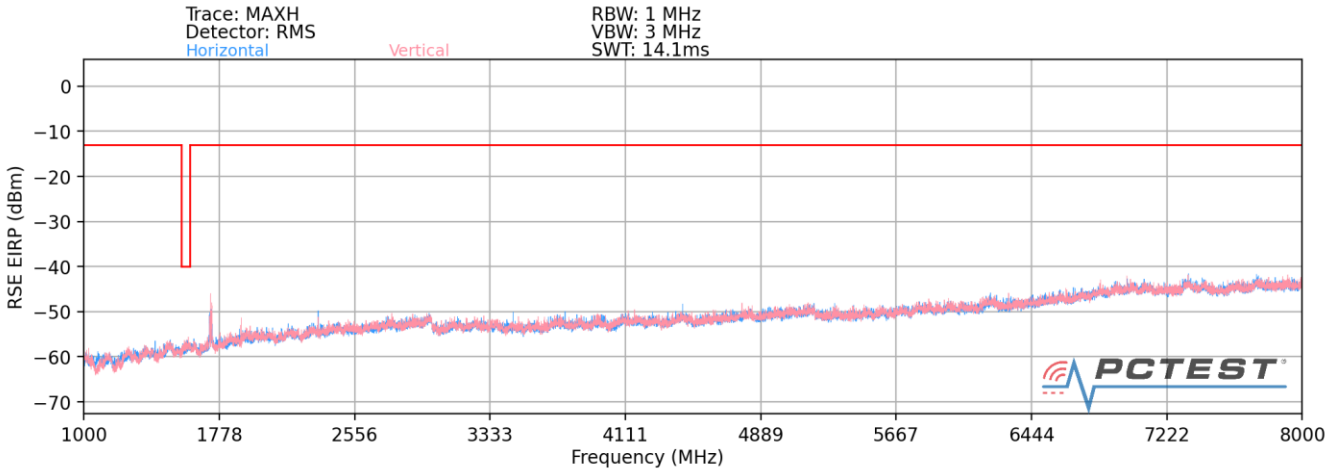
Plot 7-250. Radiated Spurious Plot (NR Band n66 – B13)

Bandwidth (MHz):	20 / 10
Frequency (MHz):	1745 / 782
RB / Offset:	1 / 53 & 1 / 25
Mode:	EN-DC
Anchor Band:	LTE Band 13

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1144.00	V	-	-	-67.89	-0.99	38.12	-57.14	-13.00	-44.14
2107.00	V	-	-	-69.99	3.76	40.77	-54.49	-13.00	-41.49
2708.00	V	-	-	-69.31	5.83	43.52	-51.73	-13.00	-38.73
3070.00	V	-	-	-71.01	6.23	42.22	-53.04	-13.00	-40.04

Table 7-30. Radiated Spurious Data (NR Band n66 – B13)

LTE Band 13 – Sub Ant



Plot 7-251. Radiated Spurious Plot (LTE Band 13 – Sub Ant)

Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1564.00	V	-	-	-68.99	-0.07	37.94	-57.31	-40.00	-17.31
2346.00	V	136	269	-60.32	3.06	49.74	-45.52	-13.00	-32.52
3128.00	V	-	-	-68.77	4.57	42.80	-52.46	-13.00	-39.46
3910.00	V	-	-	-69.76	4.74	41.98	-53.28	-13.00	-40.28
4692.00	V	-	-	-70.02	6.01	42.99	-52.26	-13.00	-39.26

Table 7-31. Radiated Spurious Data (LTE Band 13 – Low Channel – Sub Ant)

7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

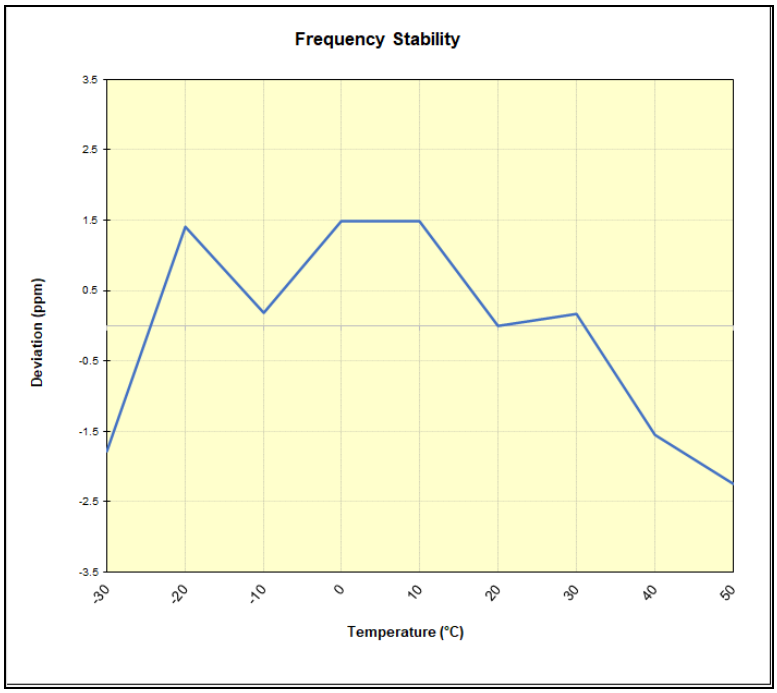
Frequency Stability / Temperature Variation

LTE Band 71

Operating Frequency (Hz):	680,500,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	680,590,483	-1,210	-0.0001778
		- 20	680,592,651	958	0.0001408
		- 10	680,591,816	122	0.0000180
		0	680,592,703	1,010	0.0001483
		+ 10	680,592,704	1,011	0.0001485
		+ 20 (Ref)	680,591,693	0	0.0000000
		+ 30	680,591,804	111	0.0000163
		+ 40	680,590,640	-1,053	-0.0001547
		+ 50	680,590,162	-1,531	-0.0002250
Battery Endpoint	3.32	+ 20	680,592,333	640	0.0000940

Table 7-32. LTE Band 71 Frequency Stability Data



Plot 7-252. LTE Band 71 Frequency Stability Chart

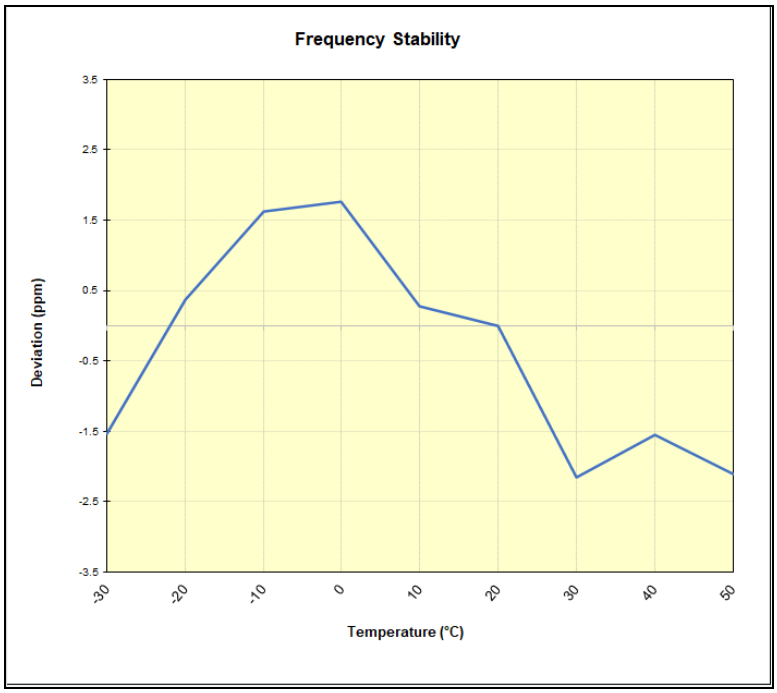
Frequency Stability / Temperature Variation

LTE Band 12/17

Operating Frequency (Hz):	707,500,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	707,590,583	-1,081	-0.0001528
		- 20	707,591,926	261	0.0000369
		- 10	707,592,817	1,152	0.0001628
		0	707,592,916	1,251	0.0001768
		+ 10	707,591,858	193	0.0000273
		+ 20 (Ref)	707,591,665	0	0.0000000
		+ 30	707,590,138	-1,527	-0.0002158
		+ 40	707,590,572	-1,093	-0.0001544
		+ 50	707,590,179	-1,486	-0.0002100
Battery Endpoint	3.32	+ 20	707,592,333	668	0.0000944

Table 7-33. LTE Band 12/17 Frequency Stability Data



Plot 7-253. LTE Band 12/17 Frequency Stability Chart

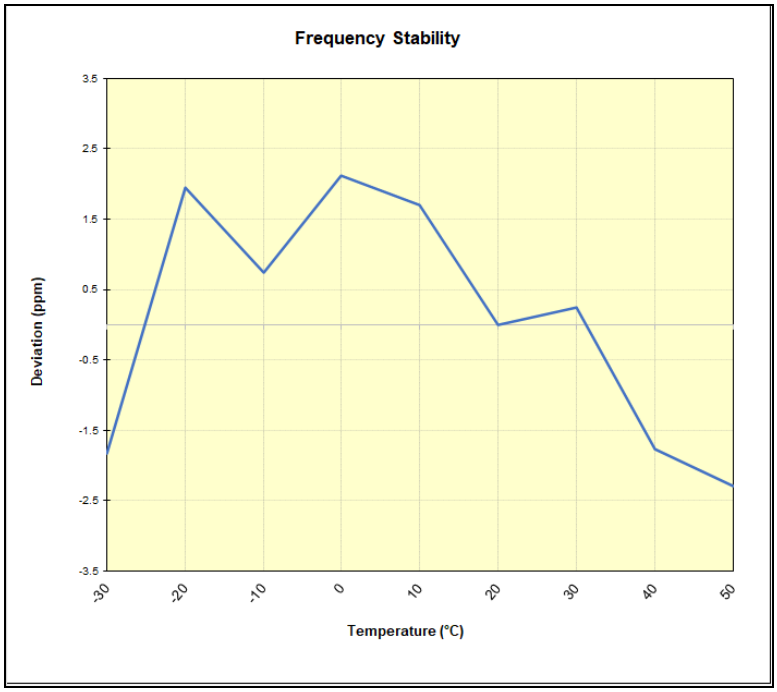
Frequency Stability / Temperature Variation

LTE Band 13

Operating Frequency (Hz):	782,000,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	782,090,696	-1,431	-0.0001830
		- 20	782,093,655	1,527	0.0001953
		- 10	782,092,702	575	0.0000735
		0	782,093,790	1,663	0.0002126
		+ 10	782,093,462	1,335	0.0001706
		+ 20 (Ref)	782,092,127	0	0.0000000
		+ 30	782,092,326	199	0.0000255
		+ 40	782,090,748	-1,379	-0.0001763
		+ 50	782,090,336	-1,791	-0.0002290
Battery Endpoint	3.32	+ 20	782,092,177	50	0.0000064

Table 7-34. LTE Band 13 Frequency Stability Data



Plot 7-254. LTE Band 13 Frequency Stability Chart

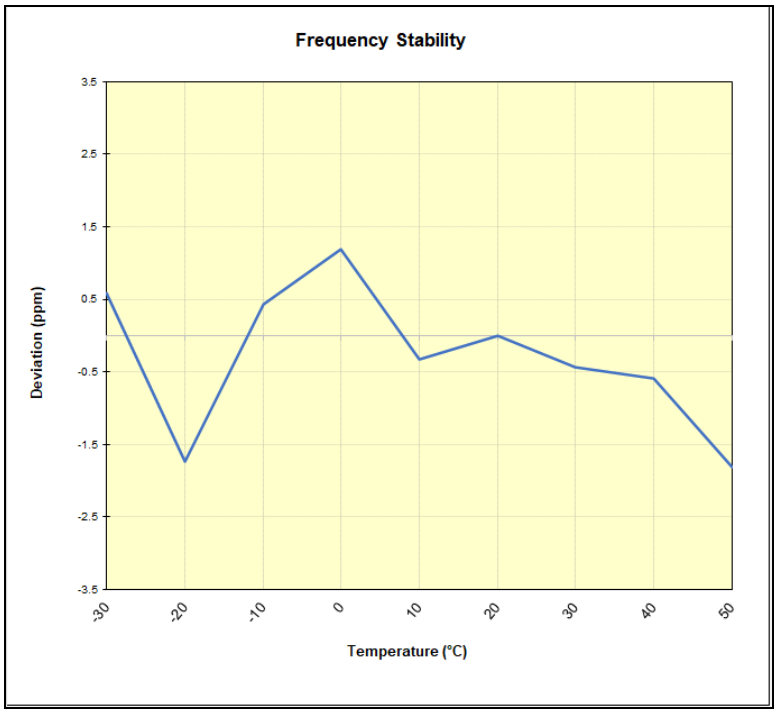
Frequency Stability / Temperature Variation

NR Band n71

Operating Frequency (Hz):	680,500,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	680,581,675	397	0.0000584
		- 20	680,580,097	-1,180	-0.0001734
		- 10	680,581,577	300	0.0000440
		0	680,582,083	806	0.0001184
		+ 10	680,581,056	-221	-0.0000325
		+ 20 (Ref)	680,581,277	0	0.0000000
		+ 30	680,580,986	-291	-0.0000427
		+ 40	680,580,875	-403	-0.0000591
		+ 50	680,580,041	-1,236	-0.0001817
Battery Endpoin	3.32	+ 20	680,581,999	722	0.0001061

Table 7-35. NR Band n71 Frequency Stability Data



Plot 7-255. NR Band n71 Frequency Stability Chart

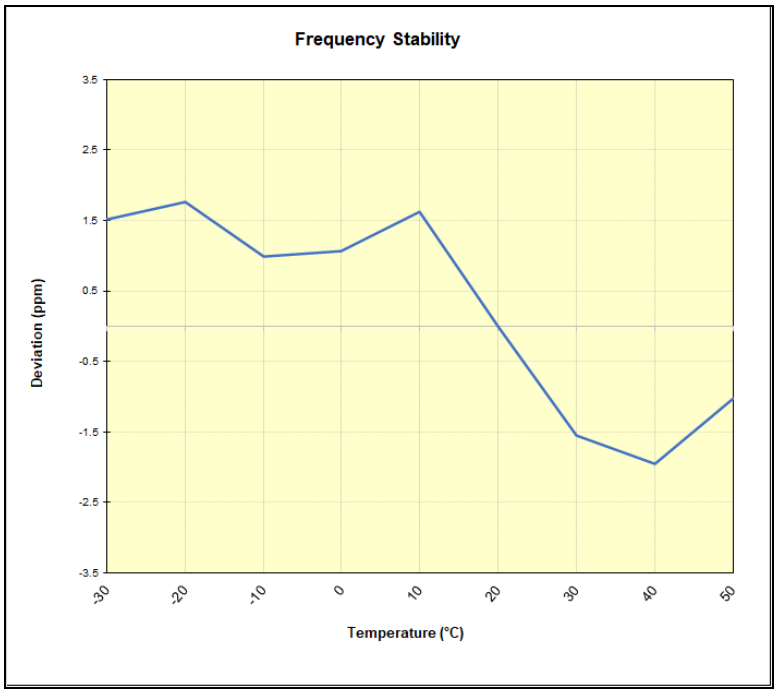
Frequency Stability / Temperature Variation

WCDMA AWS

Operating Frequency (Hz):	1,732,600,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	1,732,602,007	2,616	0.0001510
		- 20	1,732,602,461	3,070	0.0001772
		- 10	1,732,601,118	1,727	0.0000997
		0	1,732,601,241	1,850	0.0001068
		+ 10	1,732,602,215	2,824	0.0001630
		+ 20 (Ref)	1,732,599,391	0	0.0000000
		+ 30	1,732,596,718	-2,673	-0.0001543
		+ 40	1,732,596,024	-3,367	-0.0001944
		+ 50	1,732,597,623	-1,768	-0.0001021
Battery Endpoint	3.32	+ 20	1,732,598,333	-1,058	-0.0000611

Table 7-36. WCDMA AWS Frequency Stability Data



Plot 7-256. WCDMA AWS Frequency Stability Chart

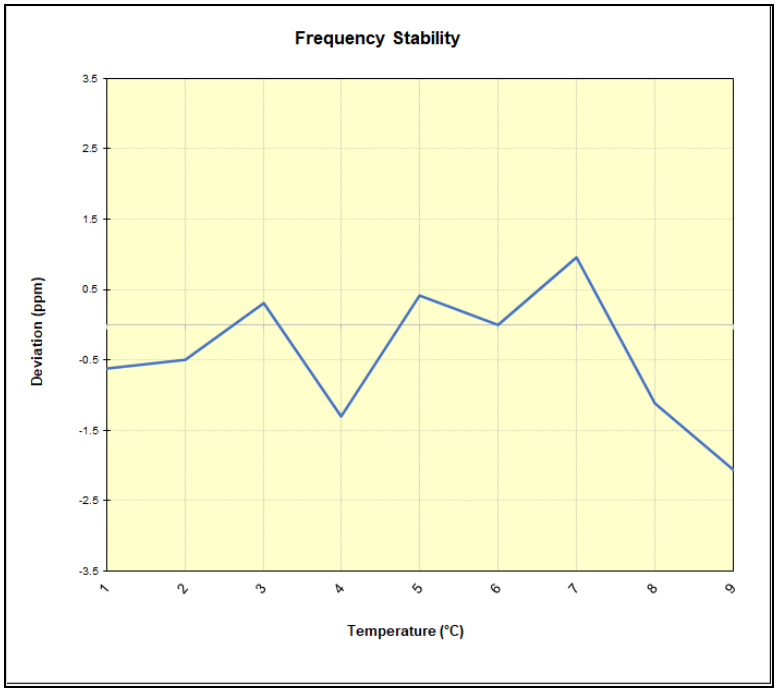
Frequency Stability / Temperature Variation

LTE Band 66/4

Operating Frequency (Hz):	1,745,000,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	1,745,092,013	-1,091	-0.0000625
		- 20	1,745,092,236	-868	-0.0000497
		- 10	1,745,093,643	539	0.0000309
		0	1,745,090,829	-2,275	-0.0001303
		+ 10	1,745,093,840	736	0.0000422
		+ 20 (Ref)	1,745,093,104	0	0.0000000
		+ 30	1,745,094,767	1,663	0.0000953
		+ 40	1,745,091,147	-1,957	-0.0001122
		+ 50	1,745,089,506	-3,598	-0.0002062
Battery Endpoint	3.32	+ 20	1,745,093,698	594	0.0000340

Table 7-37. LTE Band 66/4 Frequency Stability Data



Plot 7-257. LTE Band 66/4 Frequency Stability Chart

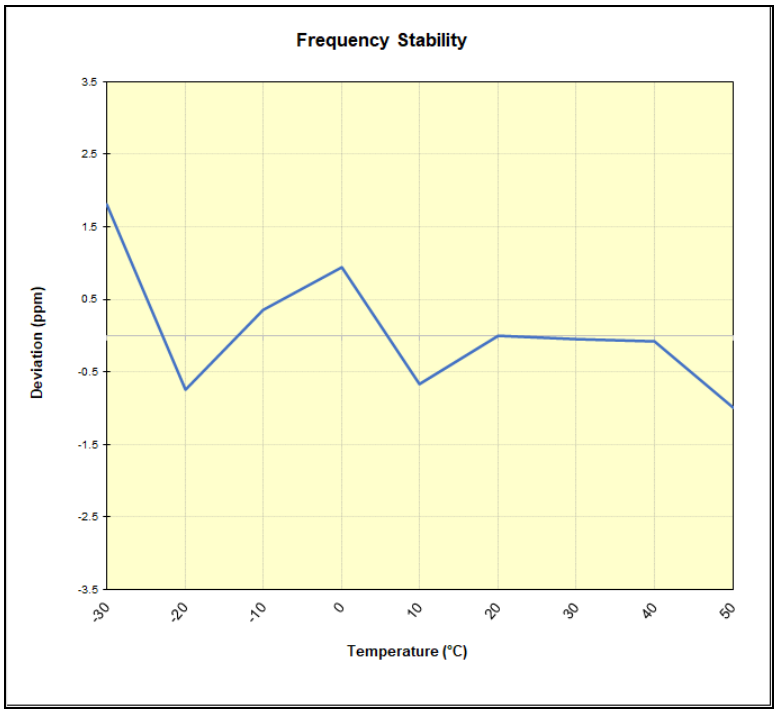
Frequency Stability / Temperature Variation

NR Band n66

Operating Frequency (Hz):	1,745,000,000
Ref. Voltage (VDC):	3.86
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.86	- 30	1,745,084,798	3,172	0.0001818
		- 20	1,745,080,342	-1,284	-0.0000736
		- 10	1,745,082,255	628	0.0000360
		0	1,745,083,276	1,650	0.0000945
		+ 10	1,745,080,455	-1,171	-0.0000671
		+ 20 (Ref)	1,745,081,626	0	0.0000000
		+ 30	1,745,081,536	-90	-0.0000052
		+ 40	1,745,081,501	-126	-0.0000072
		+ 50	1,745,079,894	-1,732	-0.0000993
Battery Endpoin	3.32	+ 20	1,745,081,049	-577	-0.0000331

Table 7-38. NR Band n66 Frequency Stability Data



Plot 7-258. NR Band n66 Frequency Stability Chart

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **SONY Portable Handset FCC ID: PY7-95324M** complies with all the requirements of Part 27 of the FCC rules.